OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850, US
Phone: +1-888-267-4436
https://www.origene.com
techsupport@origene.com
EU: info-de@origene.com
CN: techsupport@origene.cn

Product datasheet for MC222582

Prkd1 (NM_008858) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Prkd1 (NM_008858) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Prkd1
Synonyms:	Pkcm; PKD; PKD1; Prkcm
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)

View online »

Fully Sequenced ORF:

>MC222582 representing NM_008858
Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGAGCGTCCCTCCGCTGCTGCGACCGCCTAGCCCGCTCCTGCCCGCCGCGGCCGCCGTGGCTGCTGCCG
CCGCTGCGCTGGTCCCAGGCTCCGGGCCCGCGCCCTTCCCGGCGCCTGGGGCCGCCCCGGCGGGGGGCAT
CTCGTTCCATCTGCAGATCGGCCTGAGCCGCGAGCCGGTGCTGCTCCTGCAGGACTCCTCTGGCGACTAC
AGCCTGGCGCATGTCCGGGAGATGGCTTGTTCCATCGTGGACCAGAAGTTCCCCGAATGTGGTTTCTATG
GACTCTATGATAAGATCCTGCTTTTTCGGCACGATCCTGCCTCCGACAACATCCTTCAGCTGGTGAAAAT
CGCAAGTGATATCCAGGAGGGTGATCTCATTGAAGTGGTCCTGTCAGCTTCAGCCACCTTCGAAGACTTC
CAGATCCGGCCCCATGCTCTCTTCGTTCATTCATACAGAGCCCCAGCTTTCTGTGATCACTGTGGAGAAA
TGCTGTGGGGGCTGGTGCGTCAAGGCCTTAAATGTGAAGGATGTGGTCTGAATTACCATAAGAGATGTGC
ATTTAAAATCCCCAACAATTGCAGTGGAGTTAGAAGGAGAAGACTCTCCAATGTGTCCCTCACTGGACTC
GGTACTGTCCGCACAGCATCGGCTGAGTTCTCCACCAGTGTCCCTGATGAGCCTTTACTGTCTCCTGTGA
GCCCTGGCTTTGAGCAAAAGTCTCCATCTGAGTCATTTATCGGCCGTGAGAAGAGGTCAAATTCGCAGTC
ATACATCGGACGGCCGATTCAGCTCGACAAGCTCCTGATGTCTAAGGTGAAGGTGCCACACACCTTTGTC
ATCCACTCCTACACACGGCCCACGGTCTGCCAGTTCTGTAAGAAGCTCCTCAAGGGCCTCTTCCGGCAGG
GCTTGCAGTGCAAAGATTGCAGATTCAACTGTCACAAACGCTGCGCACCAAAAGTACCAAACAACTGCTT
GGGTGAAGTGACCATCAATGGAGAATTACTTAGCCCTGGTGCAGAATCTGATGTTGTTATGGAAGAAGGG
AGTGATGACAATGACAGTGAGCGGAACAGTGGGCTCATGGATGACATGGACGAGGCCATGGTCCAAGATA
CTGAGATGGCTTTGGCAGAGGGCCAGAGTGGAGGTGCAGAGATGCAAGATCCAGATGCAGACCAGGAGGA
CTCCAACAGAACCATCAGCCCTTCAACGAGCAACAACATCCCGCTCATGAGGGTAGTGCAGTCTGTGAAG
CACACGAAGCGGAGGAGCAGCACTGTGATGAAGGAAGGGTGGATGGTCCACTACACCAGCAAGGACACAC
TGCGGAAAAGGCACTACTGGAGATTGGACAGCAAATGCATAACACTCTTCCAAAATGACACAGGGAGCCG
GTACTACAAGGAAATTCCTTTATCAGAAATATTATGTCTGGAACCAGCAAAACCTTCAGCTTTAACTCCC
GTTGGAGCGACTCCTCATTGTTTTGAAATCACTACAGCGAATGTAGTGTATTATGTGGGAGAAAACGTGG
TTAACCCATCAAGTTCCCCACCAAACAACAGTGTTCTCCCCAGTGGCATCGGTCCGGATGTGGCCAGGAT
GTGGGAGGTGGCCATCCAGCATGCTCTTATGCCCGTCATCCCCAAGGGCTCCTCTGTTGGCTCCGGATCC
AACTCACACAAAGATATTTCTGTGAGCATTTCCGTTTCAAATTGCCAGATTCAGGAAAATGTGGATATCA
GCACAGTCTATCAAATATTTCCTGATGAAGTTCTGGGTTCCGGACAGTTTGGAATTGTTTATGGAGGTAA
ACATCGTAAAACAGGAAGAGATGTAGCTATTAAGATTATTGACAAATTAAGATTTCCTACAAAACAAGAA
AGTCAGCTTCGTAATGAGGTTGCAATTTTACAGAACCTTCATCACCCTGGTGTTGTAAATTTGGAGTGTA
TGTTTGAGACGCCTGAAAGAGTGTTTGTTGTTATGGAAAAACTCCATGGAGACATGCTGGAGATGATCTT
GTCAAGTGAAAAGGGCAGGTTGCCAGAACACATAACGAAGTTTTTAATTACTCAGATACTAGTGGCTTTG
CGACATCTTCATTTTAAAAACATCGTTCACTGTGACCTCAAGCCAGAAAATGTGTTGCTGGCATCAGCCG
ACCCTTTCCCTCAGGTGAAGCTCTGTGATTTTGGTTTTGCCCGGATCATTGGAGAGAAGTCTTTTAGGAG
GTCAGTGGTGGGTACCCCAGCATACCTGGCACCTGAAGTTCTGAGGAACAAGGGCTATAACCGCTCTCTG
GACATGTGGTCTGTTGGGGTCATCATCTATGTGAGCCTGAGTGGTACCTTCCCTTTTAATGAAGATGAAG
ATATCCATGATCAGATCCAGAATGCAGCCTTCATGTATCCACCCAACCCGTGGAAGGAGATTTCTCATGA
AGCCATTGATCTTATCAATAACTTGCTACAAGTGAAAATGAGAAAACGCTACAGTGTGGATAAAACCTTG
AGTCACCCTTGGCTACAGGACTATCAGACCTGGTTAGATTTACGAGAGCTGGAATGCAGAATTGGAGAAC
GCTATATTACCCACGAAAGCGATGACTCCAGGTGGGAACAGTACGCAGGCGAGCAGGGGCTGCAGTACCC
GGCGCACCTGATCAGTCTGAGTGCTAGCCACAGCGACAGTCCTGAGGCTGAAGAGAGAGAGATGAAAGCC
CTCAGTGAGCGTGTCAGCATCCTCTGA

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Restriction Sites: SgfI-MluI

ACCN:	NM_008858
Insert Size:	2757 bp
OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
Reconstitution Method:	1. Centrifuge at 5,000xg for 5min. 2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA. 3. Close the tube and incubate for 10 minutes at room temperature. 4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom. 5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.
RefSeq:	NM_008858.3, NP_032884.2
RefSeq Size:	3778 bp
RefSeq ORF:	2757 bp
Locus ID:	18760
UniProt ID:	Q62101
Cytogenetics:	12 B3
Gene Summary:	Serine/threonine-protein kinase that converts transient diacylglycerol (DAG) signals into prolonged physiological effects downstream of PKC, and is involved in the regulation of MAPK8/JNK1 and Ras signaling, Golgi membrane integrity and trafficking, cell survival through NF-kappa-B activation, cell migration, cell differentiation by mediating HDAC7 nuclear export, cell proliferation via MAPK1/3 (ERK1/2) signaling, and plays a role in cardiac hypertrophy, VEGFA-induced angiogenesis, genotoxic-induced apoptosis and flagellin-stimulated inflammatory response. Phosphorylates the epidermal growth factor receptor (EGFR) on dual threonine residues, which leads to the suppression of epidermal growth factor (EGF)-induced MAPK8/JNK1 activation and subsequent JUN phosphorylation. Phosphorylates RIN1, inducing RIN1 binding to 14-3-3 proteins YWHAB, YWHAE and YWHAZ and increased competition with RAF1 for binding to GTP-bound form of Ras proteins (NRAS, HRAS and KRAS). Acts downstream of the heterotrimeric G-protein beta/gamma-subunit complex to maintain the structural integrity of the Golgi membranes, and is required for protein transport along the secretory pathway. In the trans-Golgi network (TGN), regulates the fission of transport vesicles that are on their way to the plasma membrane. May act by activating the lipid kinase phosphatidylinositol 4-kinase beta (PI4KB) at the TGN for the local synthesis of phosphorylated inositol lipids, which induces a sequential production of DAG, phosphatidic acid (PA) and lyso-PA (LPA) that are necessary for membrane fission and generation of specific transport carriers to the cell surface. Under oxidative stress, is phosphorylated at Tyr-

469 via SRC-ABL1 and contributes to cell survival by activating IKK complex and subsequent nuclear translocation and activation of NFKB1. Involved in cell migration by regulating integrin alpha-5/beta-3 recycling and promoting its recruitment in newly forming focal adhesion. In osteoblast differentiation, mediates the bone morphogenetic protein 2 (BMP2)-induced nuclear export of HDAC7, which results in the inhibition of HDAC7 transcriptional repression of RUNX2. In neurons, plays an important role in neuronal polarity by regulating the biogenesis of TGN-derived dendritic vesicles, and is involved in the maintenance of dendritic arborization and Golgi structure in hippocampal cells. May potentiate mitogenesis induced by the neuropeptide bombesin or vasopressin by mediating an increase in the duration of MAPK1/3 (ERK1/2) signaling, which leads to accumulation of immediate-early gene products including FOS that stimulate cell cycle progression. Plays an important role in the proliferative response induced by low calcium in keratinocytes, through sustained activation of MAPK1/3 (ERK1/2) pathway. Downstream of novel PKC signaling, plays a role in cardiac hypertrophy by phosphorylating HDAC5, which in turn triggers XPO1/CRM1-dependent nuclear export of HDAC5, MEF2A transcriptional activation and induction of downstream target genes that promote myocyte hypertrophy and pathological cardiac remodeling. Mediates cardiac troponin I (TNNI3) phosphorylation at the PKA sites, which results in reduced myofilament calcium sensitivity, and accelerated crossbridge cycling kinetics. The PRKD1-HDAC5 pathway is also involved in angiogenesis by mediating VEGFA-induced specific subset of gene expression, cell migration, and tube formation. In response to VEGFA, is necessary and required for HDAC7 phosphorylation which induces HDAC7 nuclear export and endothelial cell proliferation and migration. During apoptosis induced by cytarabine and other genotoxic agents, PRKD1 is cleaved by caspase-3 at Asp-378, resulting in activation of its kinase function and increased sensitivity of cells to the cytotoxic effects of genotoxic agents. In epithelial cells, is required for transducing flagellin-stimulated inflammatory responses by binding and phosphorylating TLR5, which contributes to MAPK14/p38 activation and production of inflammatory cytokines.